

In the Claims:

Please amend the claims as follows.

1 --1(Currently amended). In a communications network, a communication unit to
2 transmit and receive information within said network comprising:

3 a at least one transmitter to transmit outgoing information to at least one other
4 communication unit within said network;

5 a at least one receiver to receive incoming information from at least one other
6 communication unit within said network; and

7 a processor to control said transmission and reception of said outgoing and incoming
8 information, wherein said processor includes:

9 a reservation module to reserve at least one communication link within said
10 network for communicating with at least one other communication unit and to dynamically select
11 a frame architecture from among a plurality of frame architectures employed by said
12 communication unit based on the mode of ~~to facilitate~~ said communications and utilization of a
13 retransmission scheme over said reserved communication link, wherein said plurality of frame
14 architectures support full duplex and simplex modes of communications and retransmission of
15 information.

1 2(Original). The unit of claim 1, wherein said network is a wireless Ad-Hoc network
2 and said incoming and outgoing information includes voice.

1 3(Currently amended). The unit of claim 1, wherein said at least one transmitter

2 transmits said outgoing information in the form of radio signals.

1 4(Currently amended). The unit of claim 1, wherein said at least one receiver
2 receives said incoming information in the form of radio signals.

1 5(Currently amended). The unit of claim 1, wherein said plurality of frame
2 architectures is compatible with a Time Division Multiple Access (TDMA) scheme.

1 6(Currently amended). The unit of claim 1, wherein said selected frame architecture
2 ~~supports at least one of duplex and simplex voice communications~~ includes a plurality of time
3 slots serving as said communication link, and said plurality of time slots includes for a simplex
4 mode at least one time slot associated with a transmission path, for a duplex mode at least one
5 additional time slot associated with a receiving path, for a retransmission mode at least one
6 additional time slot to said simplex or duplex modes and associated with a retransmission of
7 information, and at least one time slot associated with an acknowledgement.

1 7(Currently amended). The unit of claim 6, wherein said selected frame architecture
2 is employed along a routing path between said communication unit and said at least one other
3 communication unit, and said reservation module further ~~supports retransmissions~~ includes:
4 a destination acknowledge module to reserve an acknowledgement time slot for said
5 transmission path to acknowledge receipt of information in response to said unit being a
6 destination unit;
7 a source acknowledge module to reserve an acknowledgement time slot for said receiving

8 path to acknowledge receipt of information in response to said unit requesting said reservation;
9 and
10 an intermediate acknowledge module to verify, in response to said unit being an
11 intermediate unit within said routing path, receipt of information transmitted from said unit based
12 on detecting transmission of information from a succeeding unit within said routing path.

1 8(Original). The unit of claim 1, wherein said reservation module includes:
2 a neighbor module to facilitate transmission of information relating to said reservation to
3 neighboring communication units in response to reservation of said at least one communication
4 link, wherein said reservation information is disposed within neighbor discovery packets
5 periodically transmitted by said unit.

1 9(Currently amended). The unit of claim 1, wherein said selected frame architecture
2 includes a plurality of time slots serving as said communication link, and said reservation module
3 includes:
4 a reservation request module to facilitate transmission of a reservation packet along a
5 routing path to a destination communication unit, wherein said reservation packet requests
6 reservation of particular time slots for communication with said destination unit.

1 10(Original). The unit of claim 9, wherein said reservation module further includes:
2 a request module to store time slot reservations received within a reservation packet from
3 another communication unit and to process said received time slot reservations in accordance
4 with reservation information within said received reservation packet.

11(Original). The unit of claim 10, wherein said request module includes:

a slot module to determine, in response to said unit being an intermediate unit within said routing path, available time slots for transmission and retransmission of information in accordance with said reservation information, wherein said reservation information includes information relating to a selected frame architecture and time slots utilized by previous units within said routing path;

a configuration module to determine, in response to said unit being an intermediate unit within said routing path, a frame architecture supported by said unit when said selected frame architecture is incompatible with said unit;

a slot availability module to adjust, in response to said unit being an intermediate unit within said routing path, a quantity of empty slots within said reservation packet when said empty slot quantity is greater than a quantity of empty slots associated with said unit; and

a transmission module to transmit, in response to said unit being an intermediate unit within said routing path, said reservation packet to a succeeding unit within said routing path.

12(Original). The unit of claim 10, wherein said request module includes:

a frame module to determine, in response to said unit being a destination unit, a frame architecture supported by each unit within said routing path;

a slot reservation module to reserve, in response to said unit being a destination unit, said time slots requested for reservation; and

a reservation transmission module to transmit, in response to said unit being a destination unit, a confirmation packet including reservation information to said unit requesting a reservation and reservation information to neighboring units.

1 13(Currently amended). The unit of claim 9, wherein said reservation module further
2 includes:

3 a reservation confirmation module to process a confirmation packet received in response
4 to confirmation of a reservation, wherein said confirmation packet includes information relating
5 to reserved time slots and said selected frame architecture and is transmitted to a unit requesting
6 the particular reservation.

1 14(Currently amended). The unit of claim 13, wherein said reservation confirmation
2 module includes:

3 a configuration update module to update, in response to said unit being at least one of an
4 intermediate routing path unit and said requesting unit, a frame architecture in accordance with
5 said frame architecture within said confirmation packet;

6 a slot update module to update, in response to said unit being at least one of an
7 intermediate routing path unit and said requesting unit, said reserved time slots in accordance
8 with said updated frame architecture;

9 a slot selection module to select, in response to said unit being at least one of an
10 intermediate routing path unit and said requesting unit, time slots to facilitate communication in a
11 return path;

12 an acknowledgement reservation module to reserve an acknowledgement slot in response
13 to said unit being said requesting unit and said updated frame architecture supporting
14 retransmission; and

15 a confirmation transmission module to transmit, in response to said unit being at least one
16 of an intermediate routing path unit and said requesting unit, confirmation information to

17 neighboring units, wherein said confirmation information includes said updated frame
18 architecture and time slots.

1 15(Original). The unit of claim 1, wherein said processor further includes:
2 a voice transmission module to process voice signals received by said unit and facilitate
3 transmission of said processed voice signals over said reserved communication link.

1 16(Original). The unit of claim 15, wherein said voice transmission module includes:
2 a silence detection module to detect silence frames within said received voice signals and
3 prevent transmission of said detected silence frames.

1 17(Original). The unit of claim 15, wherein said processor further includes:
2 a retransmission module to facilitate retransmission of voice information in response to
3 absence of an acknowledgement of said transmitted voice signals.

1 18(Original). The unit of claim 17, wherein said voice transmission module facilitates
2 transmission of said processed voice signals on a first frequency channel, and said retransmission
3 module facilitates retransmission of said processed voice signals on a second different frequency
4 channel.

1 19(Currently amended). The unit of claim 18, wherein said selected frame
2 architecture includes transmission slots within a first half of said frame and retransmission slots
3 within a second half of said frame.

1 20(Original). The unit of claim 15, wherein said processor further includes:
2 a voice reception module to receive voice information from said network and process said
3 received voice signals for conveyance to a user.

1 21(Original). The unit of claim 15, wherein said processor further includes:
2 a termination module to terminate communications over said at least one reserved
3 communication link and to remove said reservation of said at least one communication link.

1 22(Currently amended). ~~The unit of claim 1, wherein said unit includes~~ In a
2 communications network, a communication unit to transmit and receive information within said
3 network comprising:

4 at least one transmitter to transmit outgoing information to at least one other
5 communication unit within said network;

6 at least one receiver to receive incoming information from at least one other
7 communication unit within said network; and

8 a processor to control said transmission and reception of said outgoing and incoming
9 information, wherein a data channel to facilitate said facilitates reservation of a communication
10 link and a voice channel to facilitate facilitates transfer of voice information, and said processor
11 further includes:

12 a reservation module to reserve at least one communication link within said
13 network for communicating with at least one other communication unit and to dynamically select
14 a frame architecture to facilitate said communications over said reserved communication link;

15 a data allocation module to allocate data to said voice channel in response to

16 utilization of said voice channel being below a first utilization threshold and utilization of said
17 data channel being greater than a second utilization threshold; and
18 a voice allocation module to allocate voice information to said data channel in
19 response to utilization of said data channel being below said first utilization threshold and
20 utilization of said voice channel being greater than said second utilization threshold;
21 wherein said first utilization threshold indicates light utilization and said second
22 utilization threshold indicates heavy utilization.

1 23(Currently amended). In a communication unit of a network, a method of
2 transferring information with other communication units within said network comprising:
3 (a) reserving at least one communication link within said network for communications
4 with at least one other communication unit and dynamically selecting a frame architecture from
5 among a plurality of frame architectures employed by said communication unit based on the
6 mode of ~~to facilitate~~ said communications and utilization of a retransmission scheme over said
7 reserved communication link, wherein said plurality of frame architectures support full duplex
8 and simplex modes of communications and retransmission of information.

1 24(Original). The method of claim 23, wherein said network is a wireless Ad-Hoc
2 network and said information includes voice.

1 25(Currently amended). The method of claim 23, wherein said plurality of frame
2 architectures is compatible with a Time Division Multiple Access (TDMA) scheme.

1 26(Currently amended). The method of claim 23, wherein said selected frame
2 architecture ~~supports at least one of duplex and simplex voice communications~~ includes a
3 plurality of time slots serving as said communication link, and said plurality of time slots includes
4 for a simplex mode at least one time slot associated with a transmission path, for a duplex mode
5 at least one additional time slot associated with a receiving path, for a retransmission mode at
6 least one additional time slot to said simplex or duplex modes and associated with a
7 retransmission of information, and at least one time slot associated with an acknowledgement.

1 27(Currently amended). The method of claim 26, wherein said selected frame
2 architecture is employed along a routing path between said communication unit and said at least
3 one other communication unit, and step (a) further supports retransmissions includes:

4 (a.1) reserving an acknowledgement time slot for said transmission path to
5 acknowledge receipt of information in response to said unit being a destination unit;

6 (a.2) reserving an acknowledgement time slot for said receiving path to acknowledge
7 receipt of information in response to said unit requesting said reservation; and

8 (a.3) verifying, in response to said unit being an intermediate unit within said routing
9 path, receipt of information transmitted from said unit based on detecting transmission of
10 information from a succeeding unit within said routing path.

1 28(Original). The method of claim 23, wherein step (a) further includes:

2 (a.1) transmitting information relating to said reservation to neighboring communication
3 units in response to reservation of said at least one communication link, wherein said reservation
4 information is disposed within neighbor discovery packets periodically transmitted by said

5 communication unit.

1 29(Currently amended). The method of claim 23, wherein said selected frame
2 architecture includes a plurality of time slots serving as said communication link, and step (a)
3 further includes:

4 (a.1) transmitting a reservation packet along a routing path to a destination
5 communication unit, wherein said reservation packet requests reservation of particular time slots
6 for communication with said destination unit.

1 30(Original). The method of claim 29, wherein step (a) further includes:

2 (a.2) storing time slot reservations received within a reservation packet from another
3 communication unit and processing said received time slot reservations in accordance with
4 reservation information within said received reservation packet.

1 31(Original). The method of claim 30, wherein step (a.2) further includes:

2 (a.2.1) determining, in response to said unit being an intermediate unit within said routing
3 path, available time slots for transmission and retransmission of information in accordance with
4 said reservation information, wherein said reservation information includes information relating
5 to a selected frame architecture and time slots utilized by previous units within said routing path;

6 (a.2.2) determining, in response to said unit being an intermediate unit within said routing
7 path, a frame architecture supported by said unit when said selected frame architecture is
8 incompatible with said unit;

9 (a.2.3) adjusting, in response to said unit being an intermediate unit within said routing

10 path, a quantity of empty slots within said reservation packet when said empty slot quantity is
11 greater than a quantity of empty slots associated with said unit; and

12 (a.2.4) transmitting, in response to said unit being an intermediate unit within said routing
13 path, said reservation packet to a succeeding unit within said routing path.

1 32(Original). The method of claim 30, wherein step (a.2) further includes:

2 (a.2.1) determining, in response to said unit being a destination unit, a frame architecture
3 supported by each unit within said routing path;

4 (a.2.2) reserving, in response to said unit being a destination unit, said time slots
5 requested for reservation; and

6 (a.2.3) transmitting, in response to said unit being a destination unit, a confirmation
7 packet including reservation information to said unit requesting a reservation and reservation
8 information to neighboring units.

1 33(Currently amended). The method of claim 29, wherein step (a) further includes:

2 (a.2) processing a confirmation packet received in response to confirmation of a
3 reservation, wherein said confirmation packet includes information relating to reserved time slots
4 and said selected frame architecture and is transmitted to a unit requesting the particular
5 reservation.

1 34(Currently amended). The method of claim 33, wherein step (a.2) further includes:

2 (a.2.1) updating, in response to said unit being at least one of an intermediate routing path
3 unit and said requesting unit, a frame architecture in accordance with said frame architecture

4 within said confirmation packet;

5 (a.2.2) updating, in response to said unit being at least one of an intermediate routing path
6 unit and said requesting unit, said reserved time slots in accordance with said updated frame
7 architecture;

8 (a.2.3) selecting, in response to said unit being at least one of an intermediate routing path
9 unit and said requesting unit, time slots to facilitate communication in a return path;

10 (a.2.4) reserving an acknowledgement slot in response to said unit being said requesting
11 unit and said updated frame architecture supporting retransmission; and

12 (a.2.5) transmitting, in response to said unit being at least one of an intermediate routing
13 path unit and said requesting unit, confirmation information to neighboring units, wherein said
14 confirmation information includes said updated frame architecture and time slots.

1 35(Original). The method of claim 23 further including:

2 (b) processing voice signals received by said unit and transmitting said processed
3 voice signals over said reserved communication link.

1 36(Original). The method of claim 35, wherein step (b) further includes:

2 (b.1) detecting silence frames within said received voice signals and preventing
3 transmission of said detected silence frames.

1 37(Original). The method of claim 35, further including:

2 (c) retransmitting voice information in response to absence of an acknowledgement of
3 said transmitted voice signals.

1 38(Original). The method of claim 37, wherein step (b) further includes:

2 (b.1) transmitting said processed voice signals on a first frequency channel; and

3 step (c) further includes:

4 (c.1) retransmitting said processed voice signals on a second different frequency
5 channel.

1 39(Currently amended). The method of claim 38, wherein said selected frame
2 architecture includes transmission slots within a first half of said frame and retransmission slots
3 within a second half of said frame.

1 40(Original). The method of claim 35 further including:

2 (c) receiving voice information from said network and processing said received voice
3 signals for conveyance to a user.

1 41(Original). The method of claim 35 further including:

2 (c) terminating communications over said at least one reserved communication link
3 and removing said reservation of said at least one communication link.

1 42(Currently amended). ~~The method of claim 23~~ In a communication unit of a
2 network, wherein said unit includes a data channel to facilitate said reservation of a
3 communication link and a voice channel to facilitate transfer of voice information, a method of
4 transferring information with other communication units within said network comprising:

5 (a) reserving at least one communication link within said network for communications

6 with at least one other communication unit and dynamically selecting a frame architecture to
7 facilitate said communications over said reserved communication link, wherein and step (a)
8 further includes:

9 (a.1) allocating data to said voice channel in response to utilization of said voice
10 channel being below a first utilization threshold and utilization of said data channel being greater
11 than a second utilization threshold; and

12 (a.2) allocating voice information to said data channel in response to utilization
13 of said data channel being below said first utilization threshold and utilization of said voice
14 channel being greater than said second utilization threshold;

15 wherein said first utilization threshold indicates light utilization and said second
16 utilization threshold indicates heavy utilization.

1 43(Currently amended). A communications network comprising:
2 a plurality of communication units for transferring information therebetween, wherein at
3 least one communication link within said network is reserved by a communication unit for
4 communicating with at least one other communication unit and said communicating units
5 dynamically select a frame architecture from among a plurality of frame architectures employed
6 by said communicating units based on the mode of ~~to facilitate~~ said communications and
7 utilization of a retransmission scheme over said reserved communication link, wherein said
8 plurality of frame architectures support full duplex and simplex modes of communications and
9 retransmission of information.

1 44(Original). The network of claim 43, wherein said network is a wireless Ad-Hoc

2 network and said information includes voice.

1 45(Currently amended). In a communications network, a method of transferring
2 information between communication units within said network comprising:

3 (a) reserving at least one communication link within said network for communications
4 between at least two communication units, wherein said communicating units dynamically select
5 a frame architecture from among a plurality of frame architectures employed by said
6 communicating units based on the mode of ~~to facilitate~~ said communications and utilization of a
7 retransmission scheme over said reserved communication link, wherein said plurality of frame
8 architectures support full duplex and simplex modes of communications and retransmission of
9 information.

1 46(Original). The method of claim 45, wherein said network is a wireless Ad-Hoc
2 network and said information includes voice.--